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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,208	09/12/2003	Mark Flowers	LF-112.01	7203
26292 7590 02/19/2008 LEAPFROG ENTERPRISES, INC. ATTN: PEPI ROSS 6401 HOLLIS STREET SUITE 150 EMERYVILLE, CA 94608-1070			EXAMINER HOLTON, STEVEN E	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 02/19/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/661,208	Applicant(s) FLOWERS, MARK	
	Examiner Steven E. Holton	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 125-133, 161, 162, 164-166, 170, 172-176, 197-201 and 211 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 125-133, 161, 162, 164-166, 170, 172-176, 197-201 and 211 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is made in response to applicant's amendment filed on 10/11/2007. Claims 125-133, 161, 162, 164-166, 170, 172, 173, 175, 176, 197-201, and 211 are currently pending in the application. An action follows below:

#### ***Information Disclosure Statement***

2. The information disclosure statement filed 9/12/2003 contains a listing of references based on Foreign Patent Documents and Non-Patent Literature that has not been considered. The Foreign Documents and Non-Patent Literature have not been provided as part of the submissions with the current application and have not been considered. All US Patent references on the IDS have been considered by the Examiner.

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory

double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 125, 161, 170, and 197 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,661,405. Although the conflicting claims are not identical, they are not patentably distinct from each other because the '405 patent claims do not specifically define the use of a resistive voltage divider or that the first and second antennas are disposed on the surface of the insulator that is used to separate the first and second antenna. Resistive voltage dividers are well known in the art and it would have been obvious to one skilled in the art to use a resistive voltage divider or other equivalent voltage dividers based on design choice of the system. The first and second antennas could have been disposed on the insulator or on other surfaces or substrates based on design choice depending on the needed arrangement of the antennas.

Regarding claim 197:

Claim 197 recites:	Claim 1 of USPN 6661405 recites:
A first transmitting antenna comprising a first voltage divider having at least two electrical contacts coupled to it	A first transmitting antenna comprising a first voltage divider having at least two electrical contacts coupled to it
A plurality of spaced apart electrically	A plurality of spaced apart, substantially

conductive finger elements coupled to the first voltage divider between the at least two electrical contacts;	parallel, electrically conductive finger elements coupled to the first voltage divider between the at least two electrical contacts;
the second antenna comprising a second voltage divider having at least two electrical contacts coupled to it	The second transmitting antenna comprising a second voltage divider having at least two electrical contacts coupled to it
A plurality of spaced apart, electrically conductive, finger elements coupled to the second voltage divider between the at least two electrical contacts;	A plurality of spaced apart, substantially parallel, electrically conductive, finger elements coupled to the second voltage divider between the at least two electrical contacts
Wherein the first antenna is oriented so that the finger elements of the first antenna overlay a portion of the finger elements of the second antenna	the second transmitting antenna oriented so that the area defined by its finger elements overlay a portion of the area defined by the finger elements of the second antenna**
The finger elements of the first antenna form a non-zero angel with the finger elements of the second antenna	The finger elements of the first antenna form a non-zero angle with the finger elements of the second antenna

A processor coupled to the first voltage divider at two or more electrical contacts and coupled to the second voltage divider at two or more electrical contacts;	A processor coupled to a user interface and further coupled through other electronics to the first voltage divider at two or more electrical contacts and coupled to the second voltage divider at two or more electrical contacts;
A receiving antenna coupled to the processor	A receiving antenna coupled to an amplifier, the amplifier coupled to the processor;

\*\*The Examiner notes that this portion of claim 1 states that the finger elements of the second antenna overlay the finger elements of the second antenna. The Examiner believes this is intended to state that the finger elements of the second antenna overlay the finger elements of the first antenna.

Regarding claims 125, 161, and 170, the limitations of these claims are broader than the limitations of claim 197 but substantially similar in scope. Claim 1 of the '405 patent reads on the limitations of these claims as well, except in the obviousness situations mentioned above. Therefore, claims 125, 161, 170, and 197 are rejected as an obviousness type double patenting in view of US Patent 6,661,405. The Examiner also notes that the current application is a continuation of the application used for the '405 patent.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 125-130, 132, 133, 161, 162, 164-166, 170, 197-201 are rejected under 35 U.S.C. 102(b) as being anticipated by Kable (USPN: 4678869).

Regarding claim 125, Kable discloses an antenna apparatus including “a voltage divider (Fig. 1A, elements 18a-18e) having at least two electrical contacts coupled to it (Fig. 1A, elements 24a and 24b); and a plurality of spaced apart, low resistance, finger elements coupled to the voltage divider at intervals between the at least two contacts (Fig. 1A, elements 16a-16f), such that the electrical potential along a long axis of each element is approximately uniform and each finger element radiates at an electric potential that is a function of the potential on the voltage divider where the element is coupled (the electric potential along each of the finger elements is inherently held at an approximately uniform electrical potential (voltage) and the electric potential around the finger element will radiate based on the potential of the voltage divider), wherein the voltage divider is a resistive divider (Fig. 1A, elements 18a-18e are resistors).” The circuit of Fig. 1A is described in Kable in col. 5, line 61- col. 7, line 66. Each of the lines (16a-16f) will inherently have the same voltage (electric potential) as the corresponding connection points of the voltage divider and also radiate an electrical potential field

related to the voltage applied to the line. The voltage of the line is directly related to the voltage of voltage divider where the line is connected.

Regarding claim 126, Kable discloses the width of the finger elements varies along the long axis (Fig. 6b, the widths of the finger elements changes at cross-over points; col. 10, lines 20-63).

Regarding claim 127, Kable discloses the voltage divider and the plurality of finger elements are disposed on an insulating substate (col. 6, lines 9-12).

Regarding claim 128, Kable discloses the insulating surface is substantially planar (Figs. 4, 12, and 13 show the insulating surface, element 56, as being planar).

Regarding claim 129, Kable discloses the long axes of the finger elements are substantially straight and parallel (Fig. 1, elements 16a-16f are shown as being straight and parallel).

Regarding claim 130, Kable discloses the long axes of the finger elements are substantially orthogonal to the voltage divider (Fig. 1, elements 16a-16f are orthogonal to elements 18a-18e).

Regarding claim 132, Kable discloses the intervals between the finger elements are substantially uniform (Fig. 1, elements 16a-16f have apparently the same intervals; col. 6, lines 19-25, the finger elements have an defined interval).

Regarding claim 133, Kable discloses the difference in electrical potential between adjacent finger elements is substantially constant (col. 6, lines 22-26 and col. 7, line 36 shows the difference between one line and the next line is equal for all adjacent pairs of lines).



Regarding claim 161, the Examiner notes that this claim provides multiple antenna arrangements as described in claim 125.

Kable discloses a first antenna structure (Fig. 1, elements 16a-f and 18a-18e) providing the X direction antenna and a second antenna structure (Fig. 1, elements 20a-20f and 22a-22e) providing the Y direction antenna. The finger elements of the X antenna are oriented to overlay the finger elements of the second antenna (Fig. 1, elements 16a-16f overlay elements 20a-20f). Kable also discloses the first antenna being disposed on the opposite side of an insulating substrate as the second antenna (col. 6, lines 12-30).

Regarding claim 162, Kable discloses the width of the finger elements varies along the long axis (Fig. 6b, the widths of the finger elements changes at cross-over points; col. 10, lines 20-63).

Regarding claims 164-166, Kable discloses the voltage dividers having linear shapes (Fig. 1, elements 18a-18e and 22a-22e are shown in linear arrangements).

Regarding claim 170, the Examiner notes that this claim contains the limitations of claim 166 and includes further limitations.

Kable discloses a first antenna structure (Fig. 1, elements 16a-f and 18a-18e) providing the X direction antenna and a second antenna structure (Fig. 1, elements 20a-20f and 22a-22e) providing the Y direction antenna. The finger elements of the X antenna are oriented to overlay the finger elements of the second antenna (Fig. 1, elements 16a-16f overlay elements 20a-20f). Kable also discloses the first antenna being disposed on the opposite side of an insulating substrate as the second antenna

(col. 6, lines 12-30). Kable further discloses the voltage dividers having linear shapes (Fig. 1, elements 18a-18e and 22a-22e are shown in linear arrangements). Kable also discloses the finger elements arranged straight and orthogonal to the voltage dividers on the surface of a sheet, which would inherently allow the finger elements to lie in a plane (Fig. 1, elements 16a-16f are orthogonal to elements 18a-18e, also elements 20a-20f are orthogonal to elements 22a-22e).

Regarding claim 197, the Examiner notes that this claim contains many of the limitations of previous claims and includes further limitations.

Kable discloses a first antenna structure (Fig. 1, elements 16a-f and 18a-18e) providing the X direction antenna and a second antenna structure (Fig. 1, elements 20a-20f and 22a-22e) providing the Y direction antenna. The finger elements of the X antenna are oriented to overlay the finger elements of the second antenna (Fig. 1, elements 16a-16f overlay elements 20a-20f). Kable also discloses the first antenna being disposed on the opposite side of an insulating substrate as the second antenna (col. 6, lines 12-30). Kable further discloses a processor coupled to the first and second voltage dividers by two electrical contacts (Fig. 1, element 38) and a receiving antenna coupled to the processor (Fig. 1, element 40 acts as a receiving antenna for receiving voltage levels to calculate the location of the stylus).

Regarding claim 198, Kable discloses the finger elements of the first and second antennas are substantially orthogonal (Fig. 1A, elements 16a-16f are orthogonal to elements 20a-20f).

Regarding claim 199, Kable discloses the first and second antennas being opposite sides of an insulating substrate (col. 6, lines 12-30) and Kable shows the antenna areas overlaying each other vertically in Fig. 1A.

Regarding claim 200, Kable discloses the insulating sheet and antennas are substantially planar (Figs. 4, 12, and 13 show the planar shape of the device).

Regarding claim 201, Kable discloses a drive signal transmitter for providing a voltage to the voltage dividers (Fig. 1, element 28; col. 6, lines 41-51).

5. Claims 125 and 131 are rejected under 35 U.S.C. 102(b) as being anticipated by Proctor et al. (USPN: 3304612), hereinafter Proctor.

Regarding claim 125, Proctor discloses an antenna apparatus for radiating an electric field including a resistive voltage divider with electrical contacts (Fig. 1, element 16) and a plurality of spaced apart finger elements coupled to the voltage dividers at intervals for providing an electric potential and radiating an electric potential as a function of the voltage divider (Fig. 1, elements 12).

Regarding claim 131, Proctor discloses the finger elements are curved (Fig. 5).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 172, 175, and 176 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kable.

Regarding claim 172, similar to claim 170, Kable discloses Kable discloses a first antenna structure (Fig. 1, elements 16a-f and 18a-18e) providing the X direction antenna and a second antenna structure (Fig. 1, elements 20a-20f and 22a-22e) providing the Y direction antenna. The finger elements of the X antenna are oriented to overlay the finger elements of the second antenna (Fig. 1, elements 16a-16f overlay elements 20a-20f). Kable further discloses the voltage dividers having linear shapes (Fig. 1, elements 18a-18e and 22a-22e are shown in linear arrangements). Kable also discloses the finger elements arranged straight and orthogonal to the voltage dividers on the surface of a sheet, which would inherently allow the finger elements to lie in a plane (Fig. 1, elements 16a-16f are orthogonal to elements 18a-18e, also elements 20a-20f are orthogonal to elements 22a-22e). Kable discloses the first antenna being disposed on a first insulating substrate (col. 6, lines 12-26).

Kable does not expressly disclose the second antenna disposed on a second insulating substrate.

The Examiner takes Official Notice that it is well known in the art that electric traces such as the antenna traces can be placed on either side of a suitably prepared insulating substrate. It is also well-known in the art that using separate substrates for different directions of finger elements or electrodes and then placing one substrate above the second substrate as long as finger elements are kept from touching. It would have been a matter of design choice for one skilled in the art to form the second antenna of Kable on a second insulating surface and placed in below the first insulating surface so that the antenna would be separated by an insulating area and printed on different insulating elements.

Regarding claim 175, Kable discloses the intervals between the finger elements are substantially uniform (Fig. 1, elements 16a-16f have apparently the same intervals; col. 6, lines 19-25, the finger elements have an defined interval).

Regarding claim 176, Kable discloses the difference in electrical potential between adjacent finger elements is substantially constant (col. 6, lines 22-26 and col. 7, line 36 shows the difference between one line and the next line is equal for all adjacent pairs of lines).

7. Claim 173 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kable in view of Proctor.

Regarding claim 173, as discussed above Kable teaches all of the limitations of claim 173 except, "the finger elements coupled to the first voltage divider are curved."

Proctor discloses that the finger elements of an antenna arrangement can be placed in curved arrangements (Fig. 5).

At the time of invention it would have been obvious to one skilled in the art to combine the teachings of Kable and Proctor to produce a touch input device using antenna arrangements with curved finger elements. The motivation would have been to allow for easy input of polar coordinates rather than X and Y coordinates (Proctor, col. 1, lines 52-65). Thus, it would have been obvious to one skilled in the art that a combination of Kable and Proctor would allow for curved arrangements of finger elements of an antenna for providing different coordinate systems for the input device as described in claim 173.

8. Claim 211 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kable in view of Siegel et al. (USPN: 2803799), hereinafter Siegel.

Regarding claim 211, as discussed above, Kable discloses all of the limitations except, "additional electrical contacts on the voltage divider, the additional contacts for coupled to a voltage device capable of pinning the voltage at each additional contact to a predetermined value".

Siegel discloses a resistive voltage divider with multiple contacts for pinning the contacts of the voltage divider to a predetermined value (Fig. 1, elements 48-52 are a voltage divider having contacts 54, 56, 58, 60, and 62). The contacts of the voltage divider are used to specifically set one of the contacts to a predetermined voltage coming from the indicator and lead 70 of Fig. 1.

At the time of invention it would have been obvious to one skilled in the art to modify the teachings of Kable with the teachings of Siegel. The voltage divider of Kable could be modified to include more electrical contacts at each point between resistive elements for providing specific voltages at those electrical contacts as described by Siegel. It would be logically obvious to one skilled in the art that extra electrical contacts could be provided along a voltage divider for connected additional voltage sources to the contacts for testing and calibration purposes or other related driving methods. Thus, it would have been obvious to one skilled in the art that the voltage divider of Kable could be modified to provide additional contacts for connecting predetermined voltages to the voltage divider at specific locations as described in claim 211.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Martinelli et al. (USPN: 5943044) describes a touch pad having two separate substrates for X and Y electrodes and that the electrodes could be arranged in any manner as long as the electrodes are made to not touch each other (Fig. 5 and 6; col. 10, lines 1-13).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven E. Holton whose telephone number is (571) 272-7903. The examiner can normally be reached on M-F 8:30-5.


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven E. Holton  
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February 13, 2008



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